AMENDMENTS TO THE CLAIMS

1-41. (Canceled).

42. (Currently Amended) A method for inhibiting ~~polymerization of an amyloid β peptide~~ Aβ fibril formation in a patient in need thereof, comprising administering to said patient a therapeutic effective amount of a compound defined by the Formula:

$$\mathbf{R_1\text{-}AA\text{-}R_2}$$

wherein AA in said Formula corresponds to an amino acid sequence selected from the group consisting of:

His-Gln-Lys-Leu-Val-Phe;

His-His-Gln-Lys-Leu-Val-Phe-Phe-Ala-Glu;

His-His-Gln-Lys-Leu-Val-Phe;

Val-His-His-Gln-Lys-Leu-Val-Phe-Phe-Ala;

Val-His-His-Gln-Lys-Leu-Val-Phe;

Tyr-Glu-Val-His-His-Gln-Lys-Leu-Val-Phe; and

Gly-Tyr-Glu-Val-His-His-Gln-Lys-Leu-Val;

and wherein

R_1 is H or $-CO-R_3$ bonded at the α-amino group of the N-terminal of AA;

R_2 is H or $-OR_4$ or NR_5R_6 all bound to the α-carboxyl group of the α-carboxyterminal of AA;

R_3 is a straight or branched carbon chain of 1-4 carbon atoms;

R_4 is a straight or branched carbon chain of 1-4 carbon atoms;

R_5 and R_6 independently are H, alkyl, cycloalkyl, aryl or substituted aryl or together are $-(CH_2)_n-$, where n is 4-5;

R_1 and R_2 together can form a hydrocarbon ring or heterocyclic ring; and

said amino acids can be either D- or L-isomers.

43. (Currently Amended) A method for inhibiting ~~polymerization of an amyloid β peptide~~ Aβ fibril formation, comprising contacting an amyloid β ~~peptide~~-containing environment with a polymerization inhibiting effective amount of a compound defined by the Formula:

R_1-AA-R_2

wherein AA in said Formula corresponds to an amino acid sequence selected from the group consisting of:

His-Gln-Lys-Leu-Val-Phe;

His-His-Gln-Lys-Leu-Val-Phe-Phe-Ala-Glu

His-His-Gln-Lys-Leu-Val-Phe;

Val-His-His-Gln-Lys-Leu-Val-Phe-Phe-Ala;

Val-His-His-Gln-Lys-Leu-Val-Phe;

Tyr-Glu-Val-His-His-Gln-Lys-Leu-Val-Phe; and

Gly-Tyr-Glu-Val-His-His-Gln-Lys-Leu-Val;

and wherein

R_1 is H or $-CO-R_3$ bonded at the α-amino group of the N-terminal of AA;

R_2 is H or $-OR_4$ or NR_5R_6 all bound to the α-carboxyl group of the α-carboxyterminal of AA;

R_3 is a straight or branched carbon chain of 1-4 carbon atoms;

R_4 is a straight or branched carbon chain of 1-4 carbon atoms;

R_5 and R_6 independently are H, alkyl, cycloalkyl, aryl or substituted aryl or together are $-(CH_2)_n-$, where n is 4-5;

R_1 and R_2 together can form a hydrocarbon ring or heterocyclic ring; and

said amino acids can be either D- or L-isomers.

44. (Currently Amended) The method of claim 42 or 43, wherein all the amino acids of said amino acid sequence ~~the compound~~ are D-isomers.

45. (Canceled).

46. (Currently Amended) The method of claim 42 or 43, wherein R_1 is acetyl.

47. (Canceled).

48. (Currently Amended) The method of claim 42 or 43, wherein R_1 is H or R_2 is H.

49. (Canceled).

50. (Previously Presented) The method of claim 42, wherein the patient has Alzheimer's disease or another disease characterized by amyloidosis.

51. (New) A method for inhibiting Aβ fibril formation in a patient in need thereof, comprising administering to said patient a therapeutic effective amount of a peptide consisting essentially of an amino acid sequence selected from the group consisting of:

His-Gln-Lys-Leu-Val-Phe;

His-His-Gln-Lys-Leu-Val-Phe-Phe-Ala-Glu;

His-His-Gln-Lys-Leu-Val-Phe;

Val-His-His-Gln-Lys-Leu-Val-Phe-Phe-Ala;

Val-His-His-Gln-Lys-Leu-Val-Phe;

Tyr-Glu-Val-His-His-Gln-Lys-Leu-Val-Phe; and

Gly-Tyr-Glu-Val-His-His-Gln-Lys-Leu-Val.

52. (New) The method of claim 51, wherein said amino acid sequence comprises amino acids in the D-configuration.

53. (New) The method of claim 52, wherein all of said amino acids are amino acids in the D-configuration.

54. (New) The method of claim 51, wherein said peptide is conjugated to a carrier.

55. (New) The method of claim 51, wherein the patient has Alzheimer's disease or another disease characterized by amyloidosis.

56. (New) A method for the prevention or treatment of Alzheimer's disease in a patient in need thereof, comprising administering to said patient a therapeutic effective amount of a peptide consisting essentially of an amino acid sequence selected from the group consisting of:

His-Gln-Lys-Leu-Val-Phe;

His-His-Gln-Lys-Leu-Val-Phe-Phe-Ala-Glu;

His-His-Gln-Lys-Leu-Val-Phe;

Val-His-His-Gln-Lys-Leu-Val-Phe-Phe-Ala;

Val-His-His-Gln-Lys-Leu-Val-Phe;

Tyr-Glu-Val-His-His-Gln-Lys-Leu-Val-Phe; and

Gly-Tyr-Glu-Val-His-His-Gln-Lys-Leu-Val.

57. (New) The method of claim 56, wherein said amino acid sequence comprises amino acids in the D-configuration.

58. (New) The method of claim 56, wherein all amino acids of said amino acid sequence are amino acids in the D-configuration.

59. (New) The method of claim 56, wherein said peptide is conjugated to a carrier.